# Discovery in *action*

MANITOBA HEALTH RESEARCH COUNCIL

2007/2008 annual report

**MANITOBA HEALTH RESEARCH COUNCIL**
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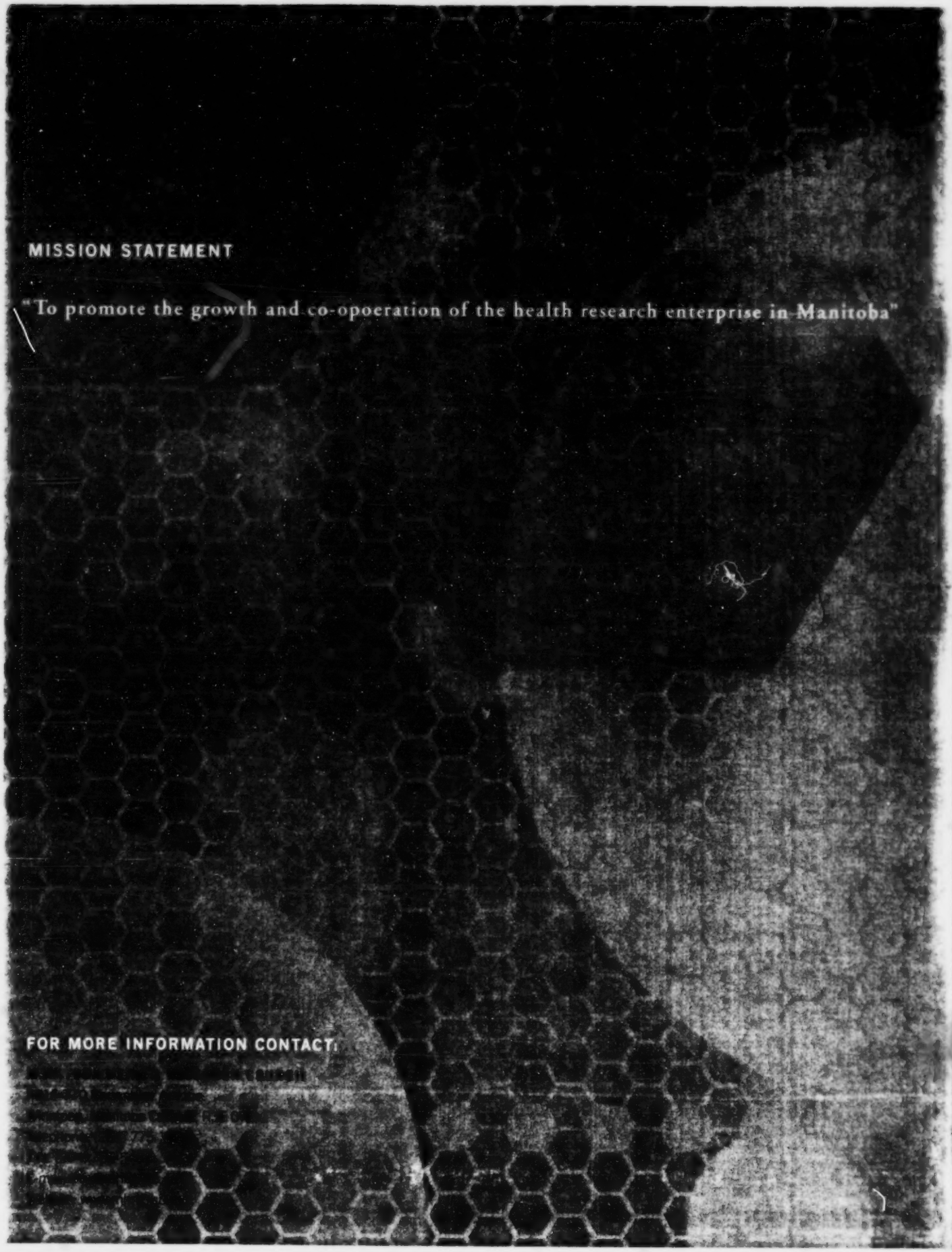
MISSION STATEMENT
"To promote the growth and co-opoeration of the health research enterprise in Manitoba"
FOR MORE INFORMATION CONTACT:

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## MEMBERS OF THE MANITOBA HEALTH RESEARCH COUNCIL

**DR. DEAN SANDHAM,** Chairperson
Dean of the Faculty of Medicine, University of Manitoba

**Dr. Judith Bartlett** Associate Professor in the Department of Community Health Sciences, University of Manitoba and Health Director of the Manitoba Metis Federation

**Mr. F. Lynn Bishop** General Manager
Prairie Region, Cargojet Canada

**Mr. John Clarkson** Deputy Minister, Department of Science, Technology, Energy & Mines, Province of Manitoba

**Dr. Albert Friesen** President, Medicure Inc.

**Dr. Henry Friesen** Distinguished Professor Emeritus, Faculty of Medicine, University of Manitoba

**Mr. David Graves** President/CEO, IMRIS

**Mr. Ray Hoemsen** Director, Applied Research and Commercialization, Red River College

**Dr. Joanne Keselman** Vice-President (Research), University of Manitoba

**Dr. Arnold Naimark** Vice Chairperson, Director, Centre for the Advancement of Medicine

**Dr. Brian Postl** Secretary Treasurer, President/ CEO, Winnipeg Regional Health Authority

**Dr. Brent Schacter** CEO, Canadian Association of Provincial Cancer Agencies

**Dr. Ian Smith** Director General, Institute for Biodiagnostics, National Research Council

**Ms Arlene Wilgosh** Deputy Minister, Manitoba Health

## MANITOBA HEALTH RESEARCH COUNCIL COMMITTEES

**Executive Committee**

Dr. Dean Sandham, Chair
Dr. Arnold Naimark, Vice-Chair
Dr. Brian Postl, Secretary/Treasurer
Dr. Ian Smith

**Finance and Audit Committee**

Dr. Brian Postl, Chair
Dr. Dean Sandham
Mr. Ray Hoemsen
Dr. David Graves
Dr. Albert Friesen
Mr. Paul Kochan (External member)

**Nominating & Governance Committee**

Dr. Dean Sandham, Chair
Mr. Lynn Bishop
Dr. Henry Friesen
Dr. Joanne Keselman
Dr. Arnold Naimark

**Research Advisory Committee**

Dr. Harvey Chochinov, Chair
Dr. Charles Bernstein
Dr. Peter Cattini
Dr. Jim Davie
Dr. Lesley Degner
Dr. Brenda Elias
Dr. Brian Hasinoff
Dr. Kent HayGlass
Dr. Geoff Hicks
Dr. Grant Pierce
Dr. George Zhanel
Dr. Brent Schacter
Dr. Judith Bartlett

## COUNCIL SECRETARIAT

**Ms Christina Weise**
Executive Director

**Ms Elizabeth C. Ford**
Administrative Officer

**Ms Shannon Rogalski**
Manager, Funding Programs

## MESSAGE FROM THE CHAIR

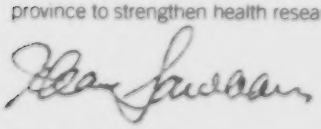
Our past year has been unlike any in the 25 year history of the Council. It has been a time of exceptional growth and the enabling of a new vision flowing from the implementation of the strategic recommendations approved under the Manitoba Health Research Strategy in 2006.

The Government of Manitoba committed to this strategy by the appointment of a new Council in 2007 and an ongoing commitment to increase the annual budget of Council. Under the direction of the new Council, existing programs were broadened and new programs initiated. Adequate support for research is essential so Manitoba can continue to attract internationally accomplished and promising investigators and, also ensure this is an exciting place for new principle investigators. This has been provided in the form of Establishment Grants, Operating Grants and PhD Dissertation Awards. Support for trainees is also key in the research endeavor and salary support has been expanded in the areas of Graduate Studentships and Postdoctoral Fellowships.

Two new awards competitions, due to the increased investment in research by the province, were also announced this past year and will be rolled out in 2008/2009. The Clinical Research Fellowships will ensure adequate support to allow pursuit of a career as a clinical scientist. In addition, a need was identified to support our mid-career independent investigators who have distinguished themselves as research stars at the national and international level. The Manitoba Research Chairs Awards will ensure the continued growth of their success and ensure they are not recruited away to markets offering more research incentives.

It is important that the Manitoba Health Research Council does not work in isolation from other funding agencies in the province. To support collaboration, a coordinated Studentship and Fellowship Grants competition with the Manitoba Health Research Council partnering with the Manitoba Institute of Child Health, the St. Boniface Hospital Research Foundation and CancerCare Manitoba Foundation was established for the upcoming funding year. This combined effort will allow for the streamlining of the review process and encourage greater communication and opportunity identification.

This last year has seen progress in the four strategic actions recommended by our stakeholders. The Manitoba Health Research Council has begun to be the coordinating body for health research in the province. As well, these initial steps will ensure that we develop, recruit and retain the best researchers. Although these successes are certainly something to celebrate, they are only the beginning. We need to continue to move forward to facilitate research networks, linkages and communications and to ultimately move to putting research evidence into practice. The Manitoba Health Research Council welcomes its new role and the challenges it brings, and looks forward to continue working with stakeholders across the province to strengthen health research for the benefit of all Manitobans.



Dr. Dean Sandham

## MESSAGE FROM THE EXECUTIVE DIRECTOR

This year marked the 25th anniversary of the establishment of the Manitoba Health Research Council (MHRC) and has been one of exciting changes and growth for the Council.

The Government of Manitoba appointed a new Council and tasked them with implementing the Manitoba Health Research Strategy developed in 2006. Members of Council are leaders from academia, government, business, health services and the voluntary sector, who reflect the diverse segments of the health research community in Manitoba. The new Council focused its early attention on governance and new program development. Council has recently established committees – Executive, Nominating and Governance, Finance and Audit and Research Advisory which are improving Council's effectiveness and links to our stakeholders. In the coming year, Council will turn its activities to revisiting the strategic plan.

Increased funding in 2007/08 provided MHRC the opportunity to fund additional personnel awards and research grants and led to the development of two new programs introduced in the 2008 competition. The Manitoba Research Chair and the Clinical Fellowship programs target recruitment and retention of researchers in Manitoba, a key action recommended within the strategy.

The strategic plan calls for increased collaboration among stakeholders in Manitoba. MHRC, together with CancerCare Manitoba Foundation, the Manitoba Institute for Child Health, and St. Boniface Health Research Centre introduced a coordinated competition for our Graduate Studentship and Post Doctoral Fellowship awards. This collaborative effort demonstrates that we can work together and sets a bench mark for future endeavours.

This last year has also seen continued efforts to work with other funding agencies across Canada. Through the National Alliance of Provincial Health Research Organizations (NAPHRO) and the Forum of Health Research Funders, MHRC meets regularly with national, provincial and charitable funding agencies to discuss the future of health research funding in Canada and develop joint initiatives that enhance our collective efforts.

MHRC is also working to improve its application and review processes and this year began implementation of the Canadian Common CV (CCCV) and an electronic grants management system, which will be used for future applications. The CCCV will become a component of our new application forms and will be the basis for the Manitoba Researcher Directory to be launched in the coming year.

In addition, MHRC created a new position and hired Shannon Rogalski to become the first Manager, Funding Programs. Shannon is responsible for managing the programs and competitions, working with the reviewers and liaising with the research community. Welcome Shannon!

Over its 25 year history the Council has provided funding that built capacity among the trainees and researchers in health related fields in Manitoba with the ultimate goal of improving the health of Manitobans and our health care system. This year, as a result of a community effort to establish a provincial strategy, MHRC's ability to lead initiatives and support excellence within the community has grown significantly. This is the first stage of the increased efforts by the Council and the community to enhance health research in Manitoba for the benefit of all.

Christina Weise

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## FUNDING PROGRAMS

Manitoba Health Research Council was established by an Act of the Legislature June 30, 1982 to promote and assist basic, clinical and applied research in the health sciences in Manitoba and advise the Minister on health research matters referred to Council. Our funding programs remain the core mechanism by which the Council achieves its mandate.

Through MHRC's long history, our focus has been on building capacity for health research in Manitoba by targeting funding towards new researchers, new recruits to Manitoba and research trainees. In each of our programs we encourage and support a broad range of human health research including basic biomedical, clinical research, health services and health systems research and research into the cultural, social and environmental determinants of health.

In 2007/08 Council approved over $3.3 million in research grants, awards and sponsorships (See Table 1 for details). The following section describes the funding programs and offers a list of recipients approved this year.

### TABLE 1: 2007 NEW APPLICATIONS, FUNDABLE AND FUNDED AWARDS

| | No | Dollar Value | No | Dollar Value | No | Dollar Value |
|---|---|---|---|---|---|---|
| Establishment Grants | 11 | $433,260.50 | 8 | $336,420.50 | 7 | $301,020.00 |
| Operating Grants | 21 | $1,132,508.00 | 12 | $620,489.00 | 12 | $620,489.00 |
| Fellowship Awards | 24 | $918,000.00 | 18 | $688,500.00 | 12 | $459,000.00 |
| Studentship Awards | 106 | $1,892,100.00 | 77 | $1,374,450.00 | 47 | $838,950.00 |
| PhD Dissertation Awards | 3 | $14,685.00 | 3 | $14,685.00 | 3 | $14,685.00 |
| Bridge Funding | 5 | $195,944.00 | 4 | $165,994.00 | 4 | $165,994.00 |
| CIHR-RPP Grants | | | 24 | $939,703.00 | 24 | $939,703.00 |
| Sponsorships | 2 | $11,500.00 | 2 | $11,500.00 | 2 | $11,500.00 |
| **TOTAL** | **172** | **$4,598,047.50** | **148** | **$4,151,741.50** | **111** | **$3,351,341.00** |

## ESTABLISHMENT GRANTS

Establishment Grants support recently recruited faculty members, who show exceptional promise. These funds allow the establishment their research programs which will enable successful application for national and international research funding. The awards, for up to $100,000 to be used within a 3-year period, provide support for a variety of purposes, e.g. buy-out of teaching time, salary for research personnel (other than the applicant's salary), purchase of equipment and supplies, etc.

**Dr. Suresh Mishra**
Department of Internal Medicine , Faculty of Medicine, University of Manitoba

*"Every independent investigator needs a foundation on which to build a future in medical research. This grant from MHRC is key to my work because it provides a platform for further investigation. It's opening the door to success."*

### UNDERSTANDING THE NATURAL PROCESS OF APOPTOSIS

Cancer is a worldwide problem that has been investigated for decades, but Dr. Suresh Mishra of the University of Manitoba is hoping that his research into apoptosis – the body's natural way of renewing itself by disposing of damaged cells – will lead to the development of new and effective drug treatments.

*"When the process of apoptosis doesn't work properly, the damaged cells can pile up and cause cancer. As well, if apoptosis doesn't occur, cancer can stop responding to treatments such as chemotherapy,"* says Dr. Mishra who received his PhD in biochemistry from the University of Delhi and has been working at the University of Manitoba for the past five years.

Dr. Mishra's study focuses on the cellular activity of transglutaminase, an enzyme that regulates apoptosis. It was recently discovered that transglutaminase acts as a protein switch that can 'turn off' the protein functions that normally protect the body against cancer. Abnormal apoptosis, says Dr. Mishra, can lead to cancer.

*"I'd like to discover more about how this natural process works and how cancer alters it," he states. "Understanding the factors involved may help us develop useful cancer treatments."*

RECIPIENT, DEPARTMENT, INSTITUTION

**Anderson, Christopher**
*Department of Pharmacology & Therapeutics, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: Emerging roles of astrocytes in neurodegeneration and brain injury.*

**Anderson, Hope**
*Faculty of Pharmacy, St. Boniface General Hospital Research Centre*
*Title: Discovery of novel mechanisms underlying heart disease and nutritional approaches to cardio protection.*

**Arora, Rakesh**
*Department of Surgery, Faculty of Medicine, St. Boniface General Hospital.*
*Title: Cellular cardiomyoplasty using adult human derived progenitor cells.*

**Jassal, Davinder**
*Department of Internal Medicine, Faculty of Medicine, St. Boniface Hospital*
*Title: The interaction of hyperlipidemia and NOS3 on ventricular remodeling after pressure-induced overload.*

**Mishra, Suresh**
*Department of Internal Medicine, Faculty of Medicine, University of Manitoba*
*Title: Role of tissue transglutaminase in diabetes and cancer.*

**Suh, Miyoung**
*Department of Human Nutritional Sciences, Faculty of Human Ecology, University of Manitoba*
*Title: Understanding mechanisms related to the testicular function: Dietary lipid approach.*

**Zhong, Wen**
*Department of Textile Sciences, Faculty of Human Ecology, University of Manitoba*
*Title: The impact of textiles on the formation and prevention of skin lesions and pressure ulcers.*

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**Dr. Brian Mark**
Department of Microbiology, Faculty of Science, University of Manitoba

*"MHRC is the Mark Laboratory's major source of provincial research funding. It's an extremely important source of funding for Manitoba researchers like myself and it's vital to sustaining ongoing medical research in the province."*

### LAYING THE GROUNDWORK FOR NEW VACCINES

Dr. Brian Mark of the University of Manitoba's Mark Laboratory utilizes X-ray crystallography to visualize the three-dimensional structures of proteins that comprise the Crimean-Congo haemorrhagic fever virus (CCHFV). CCHFV is a tick-borne virus that causes serious disease in both humans and livestock. Endemic to more than 30 countries in Africa, Asia, southeast Europe and the Middle East, CCHFV is an emerging pathogen and Dr. Mark's research is laying the groundwork for the development of new antivirals to combat it.

*"Understanding the biology of this virus is required to generate new antivirals and vaccines,"* Dr. Mark, a native of Manitoba, explains. *"CCHFV has at least three protein components and we're determining what two of them look like. This allows us to identify structural features of these viral proteins that carry out very specific tasks crucial to the survival of the virus."*

Because Dr. Mark and his research associates can accurately determine what these protein pockets actually look like at the atomic level, the three-dimensional information will be used to guide the design of small antiviral drugs that specifically bind to the viral proteins and stop them from functioning properly. *"The process is known as structure-guided drug design and it can rapidly accelerate the discovery of new drugs,"* Dr. Mark says.

RECIPIENT, DEPARTMENT, INSTITUTION

**Banerjee, Abhijit** *Department of Oral Biology, Faculty of Dentistry, University of Manitoba.*
*Title: Studies on Decorin post-transcriptional silencing dependent effects in oral premalignant epithelia.*

**Cardona, Silvia** *Department of Microbiology, Faculty of Science, University of Manitoba.*
*Title: Antibacterial drug discovery for Cystic Fibrosis bacterial pathogens.*

**Doupe, Malcolm** *Department of Community Health Sciences, Faculty of Medicine, Manitoba Centre for Health Policy.*
*Title: Performing activities of daily living tasks: Determining why some nursing home residents become more dependent with time.*

**Fernyhough, Paul** *Department of Pharmacology & Therapeutics, Faculty of Medicine, St. Boniface General Hospital Research Centre.*
*Title: Insulin and neurtrophin cross-talk in diabetic sensory neuropathy.*

**Frost, Emma** *Department of Pathology, Faculty of Medicine, University of Manitoba.*
*Title: The role of extracellular matrix proteins as regulators of myelination.*

**Klonisch, Thomas** *Department of Human Anatomy & Cell Science, Faculty of Medicine, University of Manitoba.*
*Title: EGF and proEGFcyt are novel regulators of Id2 inhibitory transcription factor in human thyroid carcinoma.*

**Kirouac, Gilbert** *Department of Oral Biology, Faculty of Dentistry, University of Manitoba.*
*Title: Thalamic regulation of stress-induced dopamine release.*

**Kong, Jiming** *Department of Human Anatomy & Cell Science, Faculty of Medicine, University of Manitoba.*
*Title: Protecting delayed neuronal death in stroke by blocking the BNIP3 pathway.*

**Lix, Lisa** *Department of Community Health Sciences, Faculty of Medicine, University of Manitoba.*
*Title: Variable importance and multiple testing for multivariate longitudinal data with applications to health-related quality of life.*

**Mark, Brian** *Department of Microbiology, Faculty of Science, University of Manitoba.*
*Title: Structural and mechanistic studies of the Crimean-Congo Haemorrhagic Fever Virus.*

**Uzonna, Jude** *Department of Immunology, Faculty of Medicine, University of Manitoba.*
*Title: Role of membrane lymphotoxin and light in the T cell response and resistance to Leishmania Major.*

**Whyard, Steven** *Department of Zoology, Faculty of Science, University of Manitoba.*
*Title: The molecular basis of West Nile Virus transmission.*

## POSTDOCTORAL FELLOWSHIP AWARDS

A limited number of fellowships are available to outstanding candidates with a doctoral degree whose prior postdoctoral research training normally does not exceed 3 years. Postdoctoral Fellows are a critical component of the research enterprise enhancing the work of established investigators and these awards support the development of the next generation of researchers.

**Dr. Kimberley O'Hara**
Faculty of Pharmacy, University of Manitoba

*"Financing from MHRC is extremely important because it allows me to pursue research into a compound that is extremely potent but that also has little public awareness. As well, receiving a fellowship is encouraging; it gives me the confidence necessary to continue with my research."*

### PAVING THE WAY FOR MORE POTENT CANCER DRUGS

With cancer continuing to be the leading cause of early death in Canada, Dr. Kimberley O'Hara's research is promising to improve the efficacy of drug therapies and helping overcome the therapeutic challenge of resistance to anticancer drugs. Dr. O'Hara, a biochemist at the University of Manitoba, says her study into the essential actions of the bacterial products, kinamycins A through F and their precursor, isoprekinamycin, are paving the way for more potent and selective analogues that can be used to combat cancer.

*"Resistance to a given anticancer drug is a common therapeutic problem and can be subdued by developing combination drug therapies that include drugs with different mechanisms of action,"* explains Dr. O'Hara who earned her Bachelor of Science at the University of Alberta and PhD in Pharmacology and Toxicology at Darmouth College. *"I'm working to determine the mode of action of isoprekinamycin and kinamycins A to F because once their molecular targets are known, we can develop synthetic and semisynthetic analogues with improved potency, selectivity and pharmacological properties."*

With the help of her research, Dr. O'Hara is confident that new, synthesized drugs capable of overcoming chemotherapeutic resistance will reduce mortality rates from cancer.

RECIPIENT, DEPARTMENT, INSTITUTION

**Arumugam, Arunkumar** *(Dr. Leigh Murphy) Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Role of estrogen receptor beta in human breast cancer-downstream target genes.*

**Cao, Wenguang** *(Dr. Jiuyong Xie) Department of Physiology, Faculty of Medicine, University of Manitoba*
*Title: PKA-Regulated alternative splicing of neuronal genes.*

**Chen, Yonqiang** *(Dr. Spencer B. Gibson) Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Effect of 2-methoxyestradiol on autophagic cell death in Cancer cells.*

**Dhingra, Sanjiv** *(Dr. Pawan Singal) Institute of Cardiovascular Sciences, St. Boniface General Hospital Research Centre*
*Title: Significance of a decrease in cardiomyocyte IL-10/TNF-alpha ratio in heart failure subsequent to myocardial infarction.*

**Joyee, Antony** *(Dr. Xi Yang) Department of Medical Microbiology, Faculty of Medicine, University of Manitoba*
*Title: NKT and DC interactions in the regulation of immune response to Chlamydial infection.*

**MacDonell, Christopher** *(Dr. Phillip Gardiner) Department of Physiology, Faculty of Medicine, University of Manitoba*
*Title: The effects of ageing on the electrophysiological properties of rat motorneurones.*

**O'Hara, Kimberley** *(Dr. Brian Hasinoff) , Faculty of Pharmacy, University of Manitoba*
*Title: The molecular mechanisms of kinamycin-induced inhibition of tumor cell growth and cell cycle progression.*

**Oikawa, Kensuke** *(Dr. Benedict Albensi) Department of Pharmacology & Therapeutics, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: The role of Hippocalcin in calcium-dependent regulation for microsomal monooxygenase system: Possible implication of hippocalcin in pathogenesis of Alzheimer's disease.*

**Pérez-Cadahía, Beatriz** *(Dr. James Davie) Department of Biochemistry and Human Genetics, Faculty of Medicine, Manitoba Institute of Cell Biology*
*Title: Role of histone biotinylation in regulating chromatin structure and function.*

**Xu, Zuyuan** *(Dr. Mohammed Moghadasian) Department of Human Nutritional Sciences, Faculty of Human Ecology, University of Manitoba*
*Title: Flaxseed oil reduces toxicity and increases efficacy of cyclosporine: a study on the mechanism of interactions between drugs and dietary agents.*

**Zuse, Anne** *(Dr. Leigh Murphy) Department of Biochemistry & Medical Genetics, Faculty of Medicine, Manitoba Institute of Cell Biology*
*Title: Apoptin-based peptidomimetics as novel anti-cancer agents.*

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**Kong, Jiming** *Department of Human Anatomy & Cell Science, Faculty of Medicine, University of Manitoba*
*Title: Protecting delayed neuronal death in stroke by blocking the BNIP3 pathway*

**Lix, Lisa** *Department of Community Health Sciences, Faculty of Medicine, University of Manitoba*
*Title: Variable importance and multiple testing for multivariate longitudinal data with applications to health-related quality of life*

**Mark, Brian** *Department of Microbiology, Faculty of Science, University of Manitoba*
*Title: Structural and mechanistic studies of the Crimean-Congo Haemorrhagic Fever virus*

**Uzonna, Jude** *Department of Immunology, Faculty of Medicine, University of Manitoba*
*Title: Role of membrane lipid rafts and IgE in the T cell response and resistance to Leishmania Major*

**Whyard, Steven** *Department of Zoology, Faculty of Science, University of Manitoba*
*Title: The molecular basis of West Nile Virus transmission*

## POSTDOCTORAL FELLOWSHIP AWARDS

A limited number of fellowships are available to outstanding candidates with a doctoral degree whose prior postdoctoral research training normally does not exceed 3 years. Postdoctoral Fellows are a critical component of the research enterprise enhancing the work of established investigators and these awards support the development of the next generation of researchers.

**Dr. Kimberley O'Hara**
Faculty of Pharmacy, University of Manitoba

### PAVING THE WAY FOR MORE POTENT CANCER DRUGS

With cancer continuing to be the leading cause of early death in Canada, Dr. Kimberley O'Hara's research is promising to improve the efficacy of drug therapies and helping overcome the therapeutic challenge of resistance to anticancer drugs. Dr. O'Hara a biochemist at the University of Manitoba, says her study into the essential actions of the bacterial products, kinamycins A through F and their precursor, isoprekinamycin, are paving the way for more potent and selective analogues that can be used to combat cancer.

*"Resistance to a given anticancer drug is a common therapeutic problem and can be subdued by developing combination drug therapies that include drugs with different mechanisms of action,"* explains Dr. O'Hara who earned her Bachelor of Science at the University of Alberta and PhD in Pharmacology and Toxicology at Dalhousie College. *"I'm working to determine the mode of action of isoprekinamycin and kinamycins A to F because once their molecular targets are known, we can develop synthetic and semisynthetic analogues with improved potency, selectivity and pharmacological properties."*

With the help of her research, Dr. O'Hara is confident that new, synthesized drugs capable of overcoming chemotherapeutic resistance will reduce mortality rates from cancer.

**Arumugam, Arunkumar** *(Dr. Leigh Murphy) Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Role of estrogen receptor beta in human breast cancer-downstream target genes*

**Cao, Wenguang** *(Dr. Juxiong Xie) Department of Physiology, Faculty of Medicine, University of Manitoba*
*Title: PKA Regulated alternative splicing of neurotrophin genes*

**Chen, Yongiang** *(Dr. Spencer B. Gibson) Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Effect of 2 methoxyestradiol on autophagic cell death in Cancer cells*

**Dhingra, Sanjiv** *(Dr. Pawan Singal) Institute of Cardiovascular Sciences, St. Boniface General Hospital Research Centre*
*Title: Significance of a decrease in cardiomyocyte IL-2/TNF-alpha ratio in heart failure subsequent to myocardial infarction*

**Joyee, Antony** *(Dr. Xi Yang) Department of Medical Microbiology, Faculty of Medicine, University of Manitoba*
*Title: NKT and DC interactions in the regulation of immune response to Chlamydial infection*

**MacDonell, Christopher** *(Dr. Philip Gardiner) Department of Physiology, Faculty of Medicine, University of Manitoba*
*Title: The effects of ageing on the electrophysiological properties of rat motoneurones*

**O'Hara, Kimberley** *(Dr. Brian Hasinoff) Faculty of Pharmacy, University of Manitoba*
*Title: The molecular mechanisms of kinamycin-induced inhibition of tumor cell growth and cell cycle progression*

**Oikawa, Kensuke** *(Dr. Benedict Attenni) Department of Pharmacology & Therapeutics, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: The role of Hippocalcin in calcium dependent regulation for mitochondrial morphological system. Possible implication of hippocalcin in pathogenesis of Alzheimer's disease*

**Pérez-Cadahía, Beatriz** *(Dr. James Davie) Department of Biochemistry and Human Genetics, Faculty of Medicine, Manitoba Institute of Cell Biology*
*Title: Role of histone butyrylation in regulating chromatin structure and function*

**Xu, Zuyuan** *(Dr. Mohammed Mazhar Qureshi) Department of Human Nutritional Sciences, Faculty of Human Ecology, University of Manitoba*
*Title: Flaxseed oil reduces toxicity and increases efficacy of cyclophosphamide: a study on the mechanism of interactions between drugs and dietary agents*

**Zuse, Anne** *(Dr. Leigh Murphy) Department of Biochemistry & Medical Genetics, Faculty of Medicine, Manitoba Institute of Cell Biology*
*Title: Apoptin-based peptidomimetics as novel anticancer agents*

## GRADUATE STUDENTSHIP AWARDS

A limited number of studentships are offered to excellent graduate students who are undertaking full-time Master's or Doctoral programs in the Province of Manitoba. These awards also aim to develop the next generation of researchers and improve the productivity of a research lab by funding graduate students.

**Mr. Jason Schapansky**
Department of Pharmacology and Therapeutics, Faculty of Medicine, University of Manitoba

### ANALYZING CALCIUM'S ROLE IN ALZHEIMER'S DISEASE

Many diseases, including Alzheimer's, arise when excessive levels of calcium provoke cellular degeneration. In the brain, calcium is considered a vital signaling molecule in neurons and can decimate cells if levels are too high. Mr. Jason Schapansky, a researcher at the University of Manitoba, recently demonstrated in mice that neuregulin, a protein that helps with fetal development and brain maturity, increases calcium levels in Alzheimer's.

*"If our research can show that neuregulin protein levels are different in Alzheimer's-diseased mice, or that its ability to increase calcium levels in brain cells is different in these mice, we may have a possible drug target for people who suffer from the disease,"* explains Mr. Schapansky, who studied at the University of Saskatchewan and is pursuing his doctorate at the University of Manitoba.

Mr. Schapansky is further analyzing calcium's role in Alzheimer's by studying its impact on disease development in the mouse model, which mimics the disease stages in humans. *"We hope to alleviate Alzheimer's disease symptoms in the mice by injecting them with compounds that block calcium release from within the neurons."*

Mr. Schapansky is confident that his research will show that inhibiting calcium accumulation within cells will eventually lead to effective treatments to reduce the severity of Alzheimer's in humans.

**Armistead, Joy** *(Dr. Barbara Triggs-Raine) Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Characterization of the molecular basis of Bowen-Conradi Syndrome*

**Balcewich, Misty** *(Dr. Brian L. Mark) Department of Microbiology, Faculty of Science, University of Manitoba*
*Title: Overcoming antibiotic resistance: Targeting the AmpC Beta-lactamase induction*

**Bates, Mollie** *(Dr. Michael LeBlow) Department of Psychology, Faculty of Arts, University of Manitoba*
*Title: Tailoring treatment to stage of change for individuals with eating disorders*

**Baugh, Lee** *(Dr. Jonathan Marotta) Department of Psychology, Faculty of Arts, University of Manitoba*
*Title: Interactions between perception and action in natural aging*

**Baxter, Shannon** *(Dr. Jeffrey Wigle) Department of Biochemistry & Medical Genetics, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: Mechanisms of Prox 1 mediated target gene regulation*

**Beiggi, Sara** *(Dr. Spencer Gibson) Department of Biochemistry & Medical Genetics, Faculty of Medicine, Manitoba Institute of Cell Biology*
*Title: Effects of BNIP3 mutations in breast tumors*

**Belik, Shay-Lee** *(Dr. Jitender Sareen) Department of Community Health Sciences, Faculty of Medicine, University of Manitoba*
*Title: A comparison of the prevalence and risk factors of suicidal ideation and suicide attempts in American Indian and general population samples*

**de Melo, Lucelia** *(Dr. Elizabeth Ready) Faculty of Kinesiology & Recreation Management, University of Manitoba*
*Title: Community and environmental supports for active aging and healthy physical function*

**Espira, Leon** *(Dr. Michael Czubryt) Department of Physiology, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: The role of scleraxis in the regulation of cardiac fibroblast collagen gene expression*

**Falzarano, Darryl** *(Dr. Heinz Feldmann) Department of Medical Microbiology, Faculty of Medicine, National Microbiology Laboratory*
*Title: Role of Ebola glycoproteins in pathogenesis and virus lifecycle*

**Gilmore, Colin** *(Dr. Jon Lovell) Department of Electrical and Computer Engineering (ECE), Faculty of Engineering, University of Manitoba*
*Title: Non-linear microwave inversion techniques applied to breast cancer detection*

**Glogowska, Aleksandra** *(Dr. Thomas Klonisch) Department of Human Anatomy & Cell Science, Faculty of Medicine, University of Manitoba*
*Title: Role of human pro-EGF cytoplasmic domain in thyroid carcinoma*

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**Mr. Jason Schapansky**
Department of Pharmacology and Therapeutics, Faculty of Medicine, University of Manitoba

*"Funding from organizations like MHRC is the cornerstone of academic research. If we didn't receive their financial support, life in the lab would shut down."*

### ANALYZING CALCIUM'S ROLE IN ALZHEIMER'S DISEASE

Many diseases, including Alzheimer's, arise when excessive levels of calcium provoke cellular degeneration. In the brain, calcium is considered a vital signaling molecule in neurons and can decimate cells if levels are too high. Mr. Jason Schapansky, a researcher at the University of Manitoba, recently demonstrated in mice that neuregulin, a protein that helps with fetal development and brain maturity, increases calcium levels in Alzheimer's.

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*Title: Role of human proEGF cytoplasmic domain in thyroid carcinoma.*

## GRADUATE STUDENTSHIP AWARDS

RECIPIENT, DEPARTMENT, INSTITUTION

**Guo, Jimin** *(Dr. Etienne Leygue) Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Altering the balance of coding and non coding SRA mRNA in breast cancer cells.*

**Guodong, Liu** *( Jiuyong Xie) Department of Physiology, Faculty of Medicine, University of Manitoba*
*Title: Cell signal regulation of alternative pre-mRNA splicing.*

**Hamlin, Jason** *(Dr. Silvia T. Cardona) Department of Microbiology, Faculty of Science, University of Manitoba*
*Title: Regulation of phenylacetic acid degradation in Burkholderia cenocepacia.*

**Hoban, Christopher** *(Dr. Graham Tipples) Department of Medical Microbiology, Faculty of Medicine, Canadian Science Centre for Human and Animal Health*
*Title: Development of a humanized measles monoclonal IgM antibody for the use as a serology quality control reagent.*

**Jiao, Lei** *(Dr. Xi Yang) Department of Medical Microbiology, Faculty of Medicine, University of Manitoba*
*Title: The molecular mechanism underlying the infection-mediated inhibition of allergic response: the interaction between natural killer cells and dendritic cells.*

**Kazina, Colin** *(Dr. Marc Del Bigio) Section of Neurosurgery, Faculty of Medicine, Health Sciences Centre*
*Title: The biomechanical properties of the brain.*

**Krueger, Carla** *(Dr. Julia Rempel) Department of Immunology, Faculty of Medicine, University of Manitoba*
*Title: IFN-alpha treatment - induced depression in individuals with chronic hepatitis C infection.*

**Lall, Debra** *(Dr. Timothy Racine) Department of Psychology, Faculty of Arts, University of Manitoba*
*Title: Links between aspects of parenting style and children's social cognitive development.*

**LeMaistre, Jillian** *(Dr. Chris Anderson) Department of Pharmacology & Therapeutics, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: The role of NMDA receptors and D-Serine in regulation of cerebral blood flow.*

**Levesque, Lisa** *(Dr. Alberto Civetta) Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Identification of genes and pathways affecting male fertility in Drosophila.*

**Louis, Sherif** *(Dr. Sabine Mai) Department of Physiology, Faculty of Medicine, Manitoba Institute of Cell Biology*
*Title: Mechanisms of c-Myc dependent genomic instability.*

**Mitchell, Ryan** *( Dr. Grant Hatch) Department of Pharmacology & Therapeutics, Faculty of Medicine, University of Manitoba*
*Title: Fatty acid transport and metabolism across human brain microvessel endothelial cells (HBMECs).*

**Nazari, Mansoreh** *(Dr. Ian Dixon) Department of Physiology, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: Role of C184M protein and c-Ski in regulation of myofibroblast function.*

**On, Ngoc** *(Dr. Don Miller) Department of Pharmacology & Therapeutics, Faculty of Medicine, University of Manitoba*
*Title: Influence of P-glycoprotein (P-gp) in treating brain tumors.*

**O'Neil, Sahra-Taylor** *(Dr. G. Hausner) Department of Microbiology, Faculty of Science, University of Manitoba*
*Title: Molecular biology and biochemical characterization of mitochondrial group II introns and homing endonuclease-like elements in species of Leptographium.*

**Paddock, Natasha** *(Dr. Phillip Gardiner) Department of Physiology, Faculty of Medicine, University of Manitoba*
*Title: The effects of altered activity on sensory neurone electrophysiology and intracellular signalling mechanisms.*

**Parsons, Joanne** *(Dr. Marion Alexander) Faculty of Kinesiology & Recreation Management, University of Manitoba*
*Title: Changes in knee biomechanics in female athletes after a neuro-muscular re-training program post-ACL reconstruction surgery.*

**Penner, Jamie** *(Dr. Susan McClement) Faculty of Nursing, University of Manitoba*
*Title: Experiences of family caregivers of patients with advanced head and neck cancer receiving enteral tube feeding.*

**Podder, Chandra** *(Dr. Abba Gumel) Department of Mathematics, Faculty of Science, Institute of Industrial Mathematical Sciences*
*Title: Mathematical Biology-Infectious Diseases.*

**Pretorius, Dorathea** *(Dr. Gordon Giesbrecht) Faculty of Kinesiology & Recreation Management, Health, Leisure and Human Performance Research Institute, University of Manitoba*
*Title: The effect of different areas of head cooling on core temperature in shivering and non-shivering humans.*

**Richmond, Meika** *(Dr. Francis A. Plummer) Department of Medical Microbiology, Faculty of Medicine, University of Manitoba*
*Title: Variate epitope specificity and immunodominance of effector and memory DC8+ T cells in HIV infection.*

continued next page

## GRADUATE STUDENTSHIP AWARDS continued from page 11

RECIPIENT, DEPARTMENT, INSTITUTION

**Schapansky, Jason** *(Dr. Gordon Glazner) Department of Pharmacology & Therapeutics, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: The role of Neuregulin in intracellular calcium release in Alzheimer's Disease.*

**Shaw, James** *(Dr. Lorrie Kirshenbaum) Department of Pharmacology & Therapeutics, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: Regulation of NF-kappaB dependent transcription in the heart.*

**Sitter, Melissa** *(Dr. C. Lengyel) Department of Human Nutritional Sciences, Faculty of Human Ecology, University of Manitoba*
*Title: The effect of relocation on the eating habits, lifestyle, nutrition attitudes and nutritional status of older adults residing in personal care homes.*

**Srisakuldee, Wattamon** *(Dr. Elissavet Kardami) Department of Physiology, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: Studies on mitochondrial connexin 43 and its phosphorylation in the injury-resistance heart.*

**Tran, Jimmy** *(Dr. Sam Kam-Pun Kung) Department of Immunology, Faculty of Medicine, University of Manitoba*
*Title: Studying NK inhibitory receptor NKR-P1B in KN differentiation and target recognition.*

**Uvarov, Anton** *(Dr. Nasrin Mesaeli) Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Identification of new markers for human lung adenocarcinoma using proteomic techniques and transgenic mouse model.*

**Wang, Tao** *(Dr. Xiaochen Gu) Faculty of Pharmacy, University of Manitoba*
*Title: Mechanisms of transdermal penetration from concurrent application of DEET and sunscreen.*

**Watts, Dorian** *(Dr. Michelle Driedger) Department of Geography, Clayton H. Riddell Faculty of Environment, Earth and Resources, University of Manitoba*
*Title: Perceptions of equivocal health risk.*

**Wierzbowski, Aleksandra** *(Dr. George Zhanel) Department of Medical Microbiology, Faculty of Medicine, University of Manitoba*
*Title: The role of efflux pump, MefA, in reduced susceptibility to macrolide and ketolide antibiotics in Streptococcus pneumoniae.*

**Yallop, Lauren** *(Dr. Marni Brownell) Department of Psychology, Faculty of Arts, University of Manitoba*
*Title: Attention-deficit/hyperactivity disorder in Manitoba adults: A population based study.*

**Yang, Yanmin** *(Dr. Valery Kupriyanov) Department of Biochemistry & Medical Genetics, Faculty of Medicine, National Research Council*
*Title: Near-infrared, thermal, and magnetic resonance imaging in the diagnostics of myocardial infarction.*

**Zhang, Tinting** *(Dr. Aaron Marshall) Department of Immunology, Faculty of Medicine, University of Manitoba*
*Title: Roles of phosphoinositide 3-kinase signal transduction pathways in B lymphocyte function.*

## PHD DISSERTATION AWARD

Dissertation awards are provided to students enrolled in a PhD program in population health or health-related social sciences in Manitoba who have completed all relevant course work and whose dissertation proposal has been approved by their PhD Advisory Committee. The awards, for up to $5,000, are to be used to cover costs incurred in the conduct of the students' dissertation research.

**Dr. Randall Fransoo**
Department of Community Health Sciences, Faculty of Medicine, University of Manitoba

*"Research at any level is expensive and this dissertation award has had a huge impact on my personal as well as my professional life. Without the funding I'd be paying the research costs myself, so it's of great benefit to me and my family."*

### QUANTIFYING THE HEALTH STATUSOF CHILDREN

Dr. Randall Fransoo received his PhD in community health services from the University of Manitoba in 2007. His dissertation centred on a population-based study that quantified how children's health status at birth and through childhood affects their academic progress and performance.

Gathering empirical data from existing administrative databases, Dr. Fransoo followed all Manitoba children from birth to Grade 3 and showed that kids who experience major illnesses or medical disorders encounter significant difficulties in school. His study also reflected how the social determinants of health, such as family environments and social connections, contribute to the overall health status and academic success of children.

*"There's much more to healthcare than just doctors and hospitals,"* says Dr. Fransoo, a Winnipeg native who also has degrees in engineering and physical education from the University of Manitoba. *"My research is contributing to the belief that public policies aimed at improving the health of our society must diversify beyond our medical system and include educational and social programs."*

Through his research, Dr. Fransoo is demonstrating that increased investment in early childhood development will result in better health and education outcomes. *"We're empirically showing that good health is framed by our social system and not just our healthcare system,"* he states.

RECIPIENT, DEPARTMENT, INSTITUTION

**Decter, Matthew** *(Dr. E.A. Johnson) Department of Psychology, Faculty of Arts, University of Manitoba*
*Title: Acceptance as disengagement: Temporal, energetic and rebound effects as the costs of control in coping with pain.*

**Ens, Carla** *(Dr. Harvey Chochinov) Department of Community Health Sciences, Faculty of Medicine, University of Manitoba*
*Title: South African physicians and the provision of palliative end-of-life care: An evaluation of perceived roles, competencies and the influence of distance education.*

**Fransoo, Randall** *(Dr. Noralou Roos) Department of Community Health Sciences, Faculty of Medicine, University of Manitoba*
*Title: How children's health status at birth and through childhood affects their progress and performance in school: A population based study.*

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## REGIONAL PARTNERSHIP PROGRAM GRANTS OPERATING GRANTS

The program provides partnership awards (matching funds) to individuals who have been awarded Canadian Institutes of Health Research Regional Partnership Program (CIHR-RPP) operating grants. Funding for this program is made available through the Department of Science, Technology, Energy and Mines and leveraged an additional $940,000 into Manitoba from CIHR.



**Dr. Aaron Marshall**
Department of Immunology, Faculty of Medicine, University of Manitoba

### DECODING THE LANGUAGE OF INTRACELLULAR SIGNALS

For three years, Dr. Aaron Marshall has been studying the regulatory power of B lymphocyte antibodies and their cornerstone role in helping the immune system protect humans from infectious diseases. Dr. Marshall says his work at the University of Manitoba is defining the roles of unusual gene products within the network of signals that regulate B cell responses in normal and diseased situations.

*"We're conducting discovery research and the overall goal of our program is to ask fundamental questions about how the linkages work,"* notes Dr. Marshall, who hails from Saskatchewan and holds degrees in microbiology and immunology from the University of Saskatchewan and University of Toronto. *"It's vital to understand how the division of lymphocyte cells are controlled and our work is decoding the signals involved in the process."*

According to Dr. Marshall, the recruitment of B lymphocytes into the immune response is controlled by interactions that trigger cascades of intracellular signaling that in turn activate cellular response programs. When B cell activation is not regulated properly, pathological conditions such as cancer can develop.

*"Deciphering the language of intracellular signals will help us find new treatment targets to aim for,"* Dr. Marshall notes.

**Anderson, Christopher** *Department of Pharmacology and Therapeutics, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: Regulation of cerebral blood flow by vascular NMDA receptors*

**Bernstein, Charles** *Department of Internal Medicine, Faculty of Medicine, University of Manitoba*
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**Eisenstat, David** *Department of Pediatrics and Child Health, Faculty of Medicine, University of Manitoba*
*Title: Regulation of retinal ganglion cell differentiation and survival by DLX transcription factors*

**Hatch, Grant** *Department of Pharmacology & Therapeutics, Faculty of Medicine, University of Manitoba*
*Title: Regulation of cardiolipin remodelling*

**Hryshko, Larry** *Department of Physiology, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: Structure-function relationships of sodium-calcium exchangers*

**Jones, Peter** *Department of Food Sciences, Faculty of Agricultural Food Sciences, Richardson Centre for Functional Foods and Nutraceuticals, University of Manitoba*
*Title: Identification of polymorphisms in the genes regulated by LXRs and PPARs of lipid metabolism pathway as a novel genetic marker of plant sterol metabolism*

**Longobardi, Teresa** *Department of Internal Medicine, Faculty of Medicine, University of Manitoba*
*Title: Lifetime cost of inflammatory bowel disease*

**Marotta, Jonathan** *Department of Psychology, Faculty of Arts, University of Manitoba*
*Title: Visuomotor processing: the sensorimotor integration in the parietal cortex*

**Marshall, Aaron** *Department of Immunology, Faculty of Medicine, University of Manitoba*
*Title: Regulation of phosphatidylinositol 3-kinase signaling in lymphocytes: Role of lipid phosphatases and novel PH domain effector proteins*

**Merz, David** *Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
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*"It's a very competitive world out there and Manitoba's support for medical research certainly puts us on par with other researchers across Canada. The impact of funding from organizations like the MHRC will be seen in 10 years; that's when the fruits of our research will ripen."*

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**Hryshko, Larry** *Department of Physiology, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: Structure-function relationships of sodium-calcium exchangers.*

**Jones, Peter** *Department of Food Sciences, Faculty of Agricultural Food Sciences, Richardson Centre for Functional Foods and Nutraceuticals, University of Manitoba*
*Title: Identification of polymorphismin the genes regulated by LXRs and PPARs of lipid metabolism pathway as a novel genetic marker of plant sterol metabolism.*

**Longobardi, Teresa** *Department of Internal Medicine, Faculty of Medicine, University of Manitoba*
*Title: Lifetime cost of inflammatory bowel disease.*

**Marotta, Jonathan** *Department of Psychology, Faculty of Arts, University of Manitoba*
*Title: Visumotor processing the sensorimotor integration in the parietal cortex.*

**Marshall, Aaron** *Department of Immunology, Faculty of Medicine, University of Manitoba*
*Title: Regulation of phosphatidylinositol 3-kinase signaling in lymphocytes: Role of lipid phosphatases and novel PH domain effector proteins.*

**Merz, David** *Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Temporal and spatial regulation of cell migration behavior.*

**Miller, Donald** *Department of Pharmacology, Faculty of Medicine, University of Manitoba*
*Title: Sphingosine 1-phosphate and blood-brain barrier permeability.*

## REGIONAL PARTNERSHIP PROGRAM GRANTS OPERATING GRANTS

RECIPIENT, DEPARTMENT, INSTITUTION

**Minuk, Gerald** *Department of Internal Medicine, Faculty of Medicine, University of Manitoba*
*Title: The molecular evolution of the Hepatitis B virus.*

**Nagy, James** *Department of Physiology, Faculty of Medicine, University of Manitoba.*
*Title: Neuroanatomy, structural composition and regulation of neuronal gap junctions in the CNS.*

**Parkinson, Fiona** *Department of Pharmacology & Therapeutics, Faculty of Medicine, University of Manitoba*
*Title: Regulation of adenosine levels.*

**Plummer, Frank** *Department of Medical Microbiology, Faculty of Medicine, University of Manitoba*
*Title: Variant epitope specificity and immunodominance of effector and memory CD8+ T cells in acute and chronic HIV infection.*

**Roos, Leslie** *Department of Community Health Sciences, Faculty of Medicine, University of Manitoba*
*Title: Avoiding hospitalization: Ambulatory care sensitive conditions, quality of care and socioeconomic status.*

**Stephens, Newman** *Department of Physiology, Faculty of Medicine, University of Manitoba.*
*Title: Airway smooth muscle relaxation: modulation by development of mechanical plasticity.*

**Stetefeld, Joerg** *Departments of Chemistry & Microbiology, Faculty of Science, University of Manitoba*
*Title: Agrin-an integrated approach to analyze the structure-function relationship of a key organizer in the neuromuscular junction and development of biomedical applications.*

**Targownik, Laura** *Department of Internal Medicine, Faculty of Medicine, University of Manitoba*
*Title: Use of a population-based health care utilization database.*

**Xie, Jiuyong** *Department of Physiology, Faculty of Medicine, University of Manitoba.*
*Title: Dissecting the molecular components of inducible alternative pre-mRNA splicing.*

**Zahradka, Peter** *Department of Physiology, Faculty of Medicine, St. Boniface General Hospital Research Centre*
*Title: Modulation of vascular smooth muscle cell.*

## REGIONAL PARTNERSHIP PROGRAM STUDENTSHIPS

RECIPIENT, DEPARTMENT, INSTITUTION

**Douville, Josette** *Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Meox regulation of downstream target genes in the cardiovasculature.*

**Yeganeh, Behzed** *Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba*
*Title: Non-small cell lung cancer in new transgenic mice over-expressing calreticulin.*

## BRIDGE FUNDING AWARDS

Bridge funding awards are once only, one-year awards designed to allow experienced, productive investigators, who have lost funding from a major national agency, to maintain their research operation while they attempt to regain national funding. This program leveraged an additional $140,000 in funding from local research institutions.

**Dodd, Janice** *Department of Physiology, Faculty of Medicine, University of Manitoba*
*Title: The role of PPAR gamma and IGF signaling pathway on progression of prostatic intraepithelial neoplasia (PIN) to prostrate cancer*

**Kung, Sam** *Department of Immunology, Faculty of Medicine, University of Manitoba*
*Title: Co-stimulatory molecules in functional definition of tolerogenic dendritic cells*

**Kupriyanov, Valerian** *Department of Biochemistry and Medical Genetics, Faculty of Medicine, Manitoba Institute for Biodiagnostics, National Research Council*
*Title: Magnetic resonance and near-infrared imaging of cryoinjury and repair by intrapericardial delivery of vascular growth factors*

**Uzonna, Jude** *Department of Immunology, Faculty of Medicine, University of Manitoba*
*Title: Regulation of anti-leishmania memory response*

**Leygue, Etienne** *Department of Biochemistry & Medical Genetics, Faculty of Medicine, University of Manitoba, Manitoba Institute of Cell Biology*
*Title: Steroid receptor RNA activator (SRA) protein in breast cancer*

## SPONSORSHIPS

The Council sponsored two events intended to build research collaborations within their specific areas of interest:

Canadian Academy of Health Sciences – *"Return on Investments in Health Research: Defining the Best Metrics"*

Golden Dragon Award – **Dr. Pat Choy**

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RECIPIENT, DEPARTMENT, INSTITUTION

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Golden Dragon Award – **Dr. Pat Choy**

## 2007 OPERATING & ESTABLISHMENT GRANT SCIENTIFIC REVIEW COMMITTEE

**Left to right:** Dr. Brent Fedirchuk, Dr. Sam Kung, Dr. Juiyong Xie, Dr. Steven Jones, Dr. Jim Thornhill, Dr. Peter Zahradka, Dr. Allan Ronald, Dr. Janice Richman-Eisenstat, Dr. Valerie Kupriyanov, Dr. Tammy Ivanco, Dr. Gregoire Nyomba

**Dr. Jim Thornhill** *Chair College of Medicine, University of Saskatchewan*
**Dr. Brent Fedirchuk** *Department of Physiology, Faculty of Medicine, University of Manitoba*
**Dr. Sam Kung** *Department of Immunology, Faculty of Medicine,University of Manitoba*
**Dr. Valerie Kupriyanov** *Institute for Biodiagnostics, National Research Council*
**Dr. Tammy Ivanco** *Department of Psychology, Faculty of Arts,University of Manitoba*
**Dr. Steven Jones** *Departments of Immunology & Medical Microbiology, Faculty of Medicine, Canadian Science Centre for Human & Animal Health*
**Dr. Gregoire Nyomba** *Department of Internal Medicine, Faculty of Manitoba, University of Manitoba*
**Dr. Janice Richman-Eisenstat** *Department of Internal Medicine, Faculty of Medicine, Manitoba Institute of Cell Biology, CancerCare Manitoba*
**Dr. Allan Ronald** *Department of Medical Microbiology, Faculty of Medicine, University of Manitoba*
**Dr. Juiyong Xie** *Department of Physiology, Faculty of Medicine, University of Manitoba*
**Dr. Peter Zahradka** *Department of Physiology, Faculty of Medicine, St. Boniface General Hospital Research Centre*

## 2007 PERSONNEL AWARDS SCIENTIFIC REVIEW COMMITTEE

**Left to right:** Dr. Michael Sowa, Dr. Rotimi Aluko, Dr. Brian Mark, Dr. Keith Fowke, Dr. Thomas Klonisch, Dr. Julia Rempel, Dr. Gordon Glazner, Dr. Donald Smyth, Dr. Pawan Singal, Dr. Mary Lynn Duckworth, Dr. Steven Latosinsky, Dr. Mohammed Moghadasian, Seated in front: Dr. Leigh Murphy, Dr. Vikram Misra

**Dr. Vikram Misra** *Chair, Western College of Veterinary Medicine, University of Saskatchewan*
**Dr. Rotimi Aluko** *Department of Human Nutritional Sciences, Faculty of Human Ecology University of Manitoba*
**Dr. Mary Lynn Duckworth** *Department of Physiology, Faculty of Medicine, University of Manitoba*
**Dr. Keith Fowke** *Department of Medical Microbiology, Faculty of Medicine, University of Manitoba*
**Dr. Gordon Glazner** *Department of Pharmacology & Therapeutics, Faculty of Medicine St. Boniface General Hospital Research Centre*
**Dr. Thomas Klonisch** *Department of Human Anatomy & Cell Science, Faculty of Medicine, University of Manitoba*
**Dr. Steven Latosinsky** *Department of Surgery, Faculty of Medicine, University of Manitoba*
**Dr. Brian Mark** *Department of Microbiology, Faculty of Science, University of Manitoba*
**Dr. Mohammed Moghadasian** *Department of Human Nutritional Sciences, Faculty of Human Ecology, St. Boniface General Hospital Research Centre*
**Dr. Leigh Murphy** *Department of Biochemistry & Medical Genetics, Faculty of Medicine CancerCare Manitoba*
**Dr. Julia Rempel** *Department of Internal Medicine, Faculty of Medicine, University of Manitoba*
**Dr. Pawan Singal** *Department of Physiology, Faculty of Medicine, St. Boniface General Hospital Research Centre*
**Dr. Donald Smyth** *Department of Pharmacology and Therapeutics, Faculty of Medicine, University of Manitoba*
**Dr. Michael Sowa** *Institute for Biodiagnostics, National Research Council*

## 2007 SOCIAL/POPULATION HEALTH SCIENTIFIC REVIEW COMMITTEE

**Left to right:** Dr. Evelyn Forget, Dr. Michelle Lobchuk, Dr. Michelle Porter, Dr. Lorna Jakobson, Dr. Brenda Elias, Dr. Rob Hoppa, Dr. Gustaaf Sevenhuysen, Dr. Lori Wilkinson, Dr. Javier Mignone,

**Dr. Michelle Porter, Chair** *Faculty of Kinesiology and Recreation Management, University of Manitoba*
**Dr. Brenda Elias** *Department of Community Health Sciences, Faculty of Medicine, University of Manitoba*
**Dr. Evelyn Forget** *Department of Community Health Sciences, Faculty of Medicine, University of Manitoba*
**Dr. Pam Hawranik** *Faculty of Nursing, University of Manitoba*
**Dr. Rob Hoppa** *Department of Anthropology, Faculty of Arts, University of Manitoba*
**Dr. Lorna Jakobson** *Department of Psychology, Faculty of Arts, University of Manitoba*
**Dr. Michelle Lobchuk** *Faculty of Nursing, University of Manitoba*
**Dr. Javier Mignone** *Department of Family Social Sciences, Faculty of Human Ecology University of Manitoba*
**Dr. Gustaaf Sevenhuysen** *Department of Human Nutritional Sciences, Faculty of Human Ecology, University of Manitoba*

MANITOBA HEALTH RESEARCH COUNCIL

FINANCIAL STATEMENTS

FOR THE YEAR ENDED MARCH 31, 2008

## MANAGEMENT REPORT

The accompanying financial statements are the responsibility of management and have been prepared in accordance with generally accepted accounting principles. In management's opinion, the financial statements have been properly prepared and of necessity include some amounts based upon management's best estimates and judgements.

As management is responsible for the integrity of the financial statements, management has established systems of internal control to provide assurance that assets are properly accounted for and safeguarded from loss.

Christina Weise
Executive Director
April, 2007

BDO

**BDO Dunwoody LLP/s.r.l.**
Chartered Accountants and Advisors
Comptables agréés et conseillers

700 - 200 Graham Avenue
Winnipeg Manitoba Canada R3C 4L5
Telephone/Téléphone: (204) 956-7200
Fax/Télécopieur: (204) 926-7201
Toll Free/Sans frais: 1-800-268-3337
www.bdo.ca

## AUDITORS' REPORT

To the Legislative Assembly of Manitoba:

We have audited the statement of financial position of MANITOBA HEALTH RESEARCH COUNCIL as at March 31, 2008 and the statements of operations and fund balances and cash flows for the year then ended. These financial statements are the responsibility of the organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the organization as at March 31, 2008 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

BDO Dunwoody LLP

Chartered Accountants
Winnipeg, Manitoba
April 22, 2008

**BDO Dunwoody LLP** *is a Limited Liability Partnership registered in Ontario*
**BDO Dunwoody s.r.l.** *est une société à responsabilité limitée constituée en Ontario*

## STATEMENT OF FINANCIAL POSITION

| March 31 | 2008 | 2007 |
|---|---|---|
| **Assets** | | |
| Current Assets | | |
| Cash and bank (Note 3) | $ 587,122 | $ 606,700 |
| Short-term investments | 365,721 | 188,118 |
| Accounts receivable | 791,557 | 269,193 |
| Accrued interest receivable | - | 3,045 |
| Prepaid expenses | 2,157 | 2,157 |
| Deposits | 500 | 500 |
| | 1,747,057 | 1,069,713 |
| Capital Assets (Note 4) | 2,846 | 4,368 |
| | $ 1,749,903 | $ 1,074,081 |
| **Liabilities and Fund Balances** | | |
| **Current Liabilities** | | |
| Accounts payable and accrued liabilities (Note 5) | $ 89,837 | $ 11,016 |
| Deferred revenue | 368,046 | - |
| Research grants payable | 441,687 | 803,656 |
| | 899,570 | 814,672 |
| **Commitments** (Note 7) | | |
| **Fund Balances** | | |
| General Research Fund (Page 4) | 755,825 | 225,198 |
| Regional Partnerships Program Fund (Page 4) | 94,508 | 34,211 |
| | 850,333 | 259,409 |
| | $ 1,749,903 | $1,074,081 |

Approved on behalf of the Board:

Director

Director

*The accompanying summary of significant accounting policies and notes are an integral part of these financial statements.*

## STATEMENT OF OPERATIONS AND FUND BALANCES

| For the year ended March 31 | General Research Fund | Regional Partnership Fund | 2008 Total | 2007 Total |
|---|---|---|---|---|
| **Revenue** | | | | |
| Province of Manitoba grants | $3,735,230 | $ 1,368,046 | $5,103,276 | $2,844,680 |
| Grants returned/rescinded | 98,822 | – | 98,822 | 224,514 |
| Investment income | 65,479 | – | 65,479 | 51,858 |
| Summit grant | – | – | – | 25,000 |
| | 3,899,531 | 1,368,046 | 5,267,577 | 3,146,052 |
| **Less: Deferred revenue, end of year** | – | 368,046 | 368,046 | – |
| | 3,899,531 | 1,000,000 | 4,899,531 | 3,146,052 |
| **Expenditures** | | | | |
| Administration (Page 11) | 440,220 | – | 440,220 | 346,061 |
| Personnel awards | 1,433,738 | 22,000 | 1,455,738 | 861,800 |
| Research grants | 1,494,946 | 917,703 | 2,412,649 | 2,021,035 |
| | 3,368,904 | 939,703 | 4,308,607 | 3,228,896 |
| **Excess (deficiency) of revenue over expenditures for the year** | 530,627 | 60,297 | 590,924 | (82,844) |
| **Fund balances,** beginning of year | 225,198 | 34,211 | 259,409 | 342,253 |
| **Fund balances,** end of year (Page 3) | $ 755,825 | $ 94,508 | $ 850,333 | $ 259,409 |

## STATEMENT OF CASH FLOWS

| For the year ended March 31 | 2008 | 2007 |
|---|---|---|
| **Cash Flows from Operating Activities** | | |
| Excess (deficiency) of revenue over expenditures for the year | **$ 590,924** | $ (82,844) |
| Adjustments for | | |
| Amortization of capital assets | **1,129** | 1,092 |
| Loss on disposal of capital assets | **1,671** | – |
| | **593,724** | (81,752) |
| Changes in non-cash working capital balances | | |
| Short-term investments | **(177,603)** | 448,756 |
| Accounts receivable | **(522,364)** | (267,861) |
| Accrued interest receivable | **3,045** | 634 |
| Prepaid expenses | **–** | (1) |
| Accounts payable and accrued liabilities | **78,821** | (1,386) |
| Deferred revenue | **368,046** | – |
| Research grants payable | **(361,969)** | 533,873 |
| | **(18,300)** | 632,263 |
| **Cash Flows from Investing Activities** | | |
| Purchase of capital assets | **(1,278)** | (396) |
| **Increase (decrease) in cash and cash equivalents during the year** | **(19,578)** | 631,867 |
| **Cash (bank indebtedness)**, beginning of year | **606,700** | (25,167) |
| **Cash,** end of year | **$ 587,122** | $ 606,700 |
| **Supplementary Information:** | | |
| Interest received | **$ 56,456** | $ 52,492 |

*The accompanying summary of significant accounting policies and notes are an integral part of these financial statements.*

## SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

March 31, 2008

These financial statements have been prepared by management in accordance with Canadian generally accepted accounting principles.

**Financial Instruments**

The organization's financial instruments consist of cash and bank, accounts receivable, short-term investments, accrued interest receivable, bank indebtedness, research grants payable and accounts payable. Unless otherwise noted, it is management's opinion that the organization is not exposed to significant interest, currency or credit risks arising from these financial instruments.

All transactions related to financial instruments are recorded on a settlement date basis except for investments. Investments are recorded on a trade date basis.

The organization classifies its financial instruments into one of the following categories based on the purpose for which the asset was acquired. The organization's accounting policy for each category is as follows:

**Held-for-trading** – This category is comprised of certain investments in equity and debt instruments, stand-alone derivatives, other than those designated as hedging items, and embedded derivatives requiring separation. They are carried in the balance sheet at fair value with changes in fair value recognized in the income statement. Transaction costs related to instruments classified as held-for-trading are expensed as incurred.

**Loans and Receivables** – These assets are non-derivative financial assets resulting from the delivery of cash or other assets by a lender to a borrower in return for a promise to repay on a specified date or dates, or on demand. They arise principally through the provision of goods and services to customers (accounts receivable), but also incorporate other types of contractual monetary assets. They are initially recognized at fair value and subsequently carried at amortized cost, using the effective interest rate method, less any provision for impairment. Transaction costs related to loans and receivables are expensed as incurred.

**Other Financial Liabilities** – Other financial liabilities includes all financial liabilities other than those classified as held-for-trading and comprises trade payables, other short-term monetary liabilities, and research grants payable. These liabilities are initially recognized at fair value and subsequently carried at amortized cost using the effective interest rate method. Transaction costs related to other financial liabilities are expensed as incurred.

## SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

March 31, 2008

**Capital Assets**

Capital assets are stated at cost less accumulated amortization. Amortization, based on the estimated useful life of the asset, is calculated as follows:

| | |
|---|---|
| Office equipment | 20% diminishing balance basis |
| Computer equipment | 20% diminishing balance basis |

**Fund Accounting**

The Manitoba Health Research Council follows the restricted fund method of accounting for contributions.

The General Research Fund reports only restricted resources that are used for research purposes. General research grants are charged to expenditures in the year the funding is committed for, by Council. Research grants returned to or rescinded by the Council are recorded as revenues when received or rescinded.

Regional Partnership awards are charged to expenditures when funding is received from the Province of Manitoba. Regional partnership awards returned to or rescinded by the Council are recorded as revenues when received or rescinded.

**Revenue Recognition**

Grant revenue is reflected in income in the period in which the grant is received or becomes receivable. Interest income is recognized as revenue when earned and is allocated proportionately to the Funds on the basis of monthly Fund balances.

**Personnel Awards**

Personnel awards and their renewals are charged to expenditures when funding is approved by Council.

**Administrative Expenditures**

Administration expenses are allocated 100% to the General Research Fund.

## NOTES TO FINANCIAL STATEMENTS

March 31, 2008

### 1. Entity definition

The Manitoba Health Research Council was established by The Manitoba Health Research Council Act to promote and assist basic, clinical and applied research in the health sciences in Manitoba. The Manitoba Health Research Council is a registered charity and is exempt from tax under the Income Tax Act.

### 2. Change in Accounting Policy

On April 1, 2007, the organization retrospectively adopted, without restatement of net assets, CICA Handbook Section 3861, "Financial Instruments - Disclosure and Presentation" and Section 3855, "Financial Instruments – Recognition and Measurement". Under these new standards, all financial instruments are included on the statement of financial position and are measured either at fair market value or, in limited circumstances, at cost or amortized cost.

The adoption of these new standards had no effect on the reported balances in the organization's statement of financial position and statement of operations and changes in net assets.

| 3. Cash and Bank | 2008 | 2007 |
|---|---|---|
| Bank of Montreal current account | **$ 44,743** | $ 605,225 |
| Wellington West cash account | **542,379** | 1,475 |
| | **$ 587,122** | $ 606,700 |

| 4. Capital Assets | 2008 | | 2007 | |
|---|---|---|---|---|
| | **Cost** | **Accumulated Amortization** | Cost | Accumulated Amortization |
| Office equipment | **$2,358** | **$ 1,633** | $ 7,058 | $ 5,308 |
| Computer equipment | **6,954** | **4,833** | 7,351 | 4,733 |
| | **$ 9,312** | **$ 6,466** | $ 14,409 | $ 10,041 |
| Cost less accumulated amortization | | **$ 2,846** | | $ 4,368 |

### 5. Accounts Payable and Accrued Liabilities

Included in accounts payable are appropriations of $78,554 ($59,400 for the Provincial and Inter-provincial Research Directory Project and $19,154 for the Canadian Common CV Project) for expenditures committed to in the 2007/08 fiscal year which will be incurred in the coming year.

### 6. Related Party Transactions

Manitoba Health Research Council is related to all Province of Manitoba departments and agencies. During the year, the Council had the following transactions with related organizations:

| | 2008 | 2007 |
|---|---|---|
| Grant Revenue | **$5,103,276** | $2,844,680 |

These transactions are in the normal course of operations and are measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

### 7. Commitments

The Manitoba Health Research Council has committed grants and awards under the General Research Fund and the Regional Partnership Fund as follows:

| Year | General Research Fund | Regional Partnership Fund | Total |
|---|---|---|---|
| **2009** | $ 2,062,044 | $ 404,236 | $2,466,280 |
| **2010** | 182,804 | – | 182,804 |
| | $2,244,848 | $ 404,236 | $2,649,084 |

Commitments of future years of the General Research Fund and Regional Partnership Fund are not recorded as an expenditure in the year of commitment, they are recorded as an expenditure in the year they are committed for. These commitments will be funded as follows:

| | |
|---|---|
| Current General Research Fund Balance | **$ 755,825** |
| Current Regional Partnership Fund Balance | **94,508** |
| Deferred revenue | **368,046** |
| Future Province of Manitoba grants | **1,430,705** |
| | **$2,649,084** |

The organization has future payments under operating leases for the next two years are as follows:

| | |
|---|---|
| 2009 | $ 3,386 |
| 2010 | 3,386 |

### 8. Economic Dependence

The Manitoba Health Research Council relies almost entirely on grants from the Province of Manitoba.

## SCHEDULE OF ADMINISTRATIVE EXPENSES

| For the year ended March 31 | 2008 | 2007 |
|---|---|---|
| Accounting and audit | **$ 3,953** | $ 3,754 |
| Amortization | **1,129** | 1,092 |
| Bank charges and interest | **137** | 217 |
| Communications | **109,219** | 18,550 |
| Conferences, meetings and travel | **19,070** | 5,093 |
| Council and committee expenses | **30,117** | 5,933 |
| Delivery | **3,327** | 2,831 |
| Insurance | **4,400** | 4,272 |
| Marketing | **12,731** | – |
| Parking | **1,398** | 1,681 |
| Printing, stationery and office supplies | **12,350** | 7,636 |
| Promotions | **6,911** | 4,450 |
| Repairs and maintenance | **1,919** | 1,944 |
| Salaries and benefits | **231,888** | 197,262 |
| Loss on disposal of asset | **1,671** | – |
| Summit Expenses | – | 91,346 |
| | **$ 440,220** | $ 346,061 |

MANITOBA HEALTH RESEARCH COUNCIL

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